

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

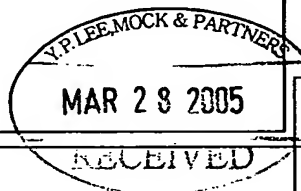
LEE, Young-Pil

The Cheonghwa Building, 1571-18 Seocho-dong, Seocho-gu
Seoul 137-874, Republic of Korea

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)



Date of mailing
(day/month/year) 24 MARCH 2005 (24.03.2005)

Applicant's or agent's file reference
SH-21349-PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2004/003170

International filing date (day/month/year)

03 DECEMBER 2004 (03.12.2004)

Priority date(day/month/year)

05 DECEMBER 2003 (05.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC7 G11B 7/24

Applicant

SAMSUNG ELECTRONICS CO., LTD. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

JANG, Hyun Sook

Telephone No. 82-42-481-5404



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/003170

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/003170

Box No. V - Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability ☐ citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2 - 16	YES
	Claims	1	NO
Inventive step (IS)	Claims	4 - 16	YES
	Claims	2, 3	NO
Industrial applicability (IA)	Claims	1 - 16	YES
	Claims		NO

2. Citations and explanations :

(1) Reference is made to the following documents :

D1 : KR 2003-0002590 A (Korea Institute Science AND Technology)
09 JANUARY 2003
D2 : JP 2000-311399 A (Sharp Ltd.) 7 November 2000
D3 : KR 1999-0086849 A (LG Ele. Ltd.) 15 December 1999

(2) The present invention according to claims 1-16 relates to a super resolution information storage medium and a method of reproducing information. The information storage medium is recorded as marks and a mark is smaller than a resolution of an incidence beam, includes a substrate and a super resolution layer or a thermal absorption layer directly arranged on the substrate without any layers therebetween to reproduce the marks by generating a thermal reaction at a portion where the incidence beam is focused.

(3) Document D1 discloses a high density optical data storage medium is provided to enable high density write and read by forming a fine focus light.

Document D2 relates to a magneto optical recording medium and it's reproducing device, which always enables reproducing with good precision and the most suitable reproducing power without receiving influence of an adjacent track by recording a recording mark.

Document D3 relates to a multi-layered optical recording medium and a method for fabricating the recording medium provided to minimize a pit size and to reduce track pitch so as to increase recording capacity.

(continued on Supplemental Box)

WRITTEN OPINION OF THE
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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of :

(4) Novelty

The structure for the information storage of claim 1 is the same that of D1. So Claim 1 does not appear to be novel.

However, claims 2-16 are considered to be novel(PCT Article 33(2)).

(5) Inventive step

Claim 2 is characterized by marks comprising a pit type on the substrate.

The marks are similar to the mark which is described in D2.

Therefore, Claim 2 is easy for a person skilled in this art part to arrive at by application of the mark which is described in D2.

Claim 3 is formed of at least one of PtOx, AuOx, PdOx and AgOx or polymer compound in super resolution layers.

However, the kind of materials in claim 3 is similar to the materials known from D3.

Therefore, Claims 2, 3 are not considered to involve an inventive step(PCT Article 33(3)).

(6) Industrial Applicability

Claims 1-16 are considered to be industrially applicable because they are directed to an information storage medium (PCT Article 33(3)).